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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,098	02/28/2002	Fisseha Mekuria	53807-00016USPT	4359
7590 03/14/2005 JENKENS & GILCHRIST 3200 Fountain Place 1445 Ross Avenue Dallas, TX 75202-2799			EXAMINER PIERRE, MYRIAM	
			ART UNIT 2654	PAPER NUMBER
DATE MAILED: 03/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/090,098		MEKURIA ET AL.	
	Examiner		Art Unit	
	Myriam Pierre		2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/04/2002</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-2 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Sengodan (WO 01/54116).

Sengodan teaches

detecting the loss of a particular data frame at said receiving side (**receives several packets having at least one frame of data per packet, examined to detect a missing frame of data, page 3, lines 24-29**); and

replacing the particular pitch synchronous frame containing said lost data frame **{missing frame}** with a replica of the pitch synchronous frame immediately preceding said particular pitch synchronous frame in said succession **{before and after missing frame}** (**replicated frame is used to replace the missing frame, pitch synchronous block reduction used for lost packet recovery. Page 6, lines 14-15 & 20-24, & Abstract**).

As to claim 2, Sengodan does not teach of detecting energy loss associated with the pitch-synchronized frames.

However, Official Notice is taken that it would have been obvious to one of ordinary skill in the art at the time of invention that for detecting the loss of pitch frame, one would determine the properties of a speech signal, such as energy, since background noise has lower energy.

As to claim 13, Sengodan teaches

a lost frame detector for detecting the loss of a data frame at said receiving side **(lost packet recover device, necessarily detects by replacing missing frames, Abstract);**

error concealment by replacing the particular pitch synchronous frame containing the lost data frame with a replica of the pitch synchronous frame immediately preceding said particular pitch synchronous frame in said succession **(replicated frame is used to replace the missing frame, pitch synchronous block reduction used for lost packet recovery. Page 6, lines 14-15 & 20-24, & Abstract);**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2654

4. Claims 3-5 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengodan (WO 01/54116).

As to claims 3 and 15, Sengodan does not teach computing threshold values.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to compute threshold values **in order** to determine the energy and thus packet loss.

Sengodan does not teach thresholding average magnitude.

However, Official Notice is taken that it would have been obvious to one of ordinary skill in the art at the time of invention to use the average magnitude represents a natural sound magnitude rather than an individual magnitude, to obtain an accurate representation of the speech frame energy.

As to claims 4 and 16, Sengodan does not teach computing the magnitude difference value for comparison with a threshold.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to alternatively determine the difference in the average magnitude of adjacent pitch synchronous frames to a threshold **in order** to determine the amount of energy loss.

Sengodan does not teach lost frame difference value exceeds a set threshold.

At the time of the invention, it would have been obvious to one of ordinary

skill in the art to thus determine the existence of frame loss **in order** to invoke error concealment.

As to claims 5 and 17, Sengodan does not teach pitch period thresholding.

However, Official Notice is taken that it would have been obvious to one of ordinary skill in the art at the time of invention to compute threshold values for estimated pitch period or frequency, for the pitch period is low or frequency estimate is high if noise is processed.

5. Claims 6-7, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengodan (WO 01/54116) in view of Eskelinen (WO 00/70602).

As to claims 6 and 18, Sengodan suggests but does not explicitly teach generating a train samples representing waveforms **(frames that comes before and after missing frame, Abstract)**.

However, Eskelinen teaches generating a train of signal samples from said voice information said collectively representing a succession of signal waves **(producing a train of audio signal samples, voicedness, page 1, line 10 & Fig. 2B)**.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to process successions of pitch periods associated with the train of samples **in order** determine the pitch period for synchronizing.

Sengodan does not teach identifying respective peaks.

However, Eskelinen teaches

identifying respective positive peaks of said waveforms **(Fig. 2B)**.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to identify signal peaks of waveforms/succession of frames **in order** to determine the pitch period for synchronizing the pitch cycles.

As to claims 7 and 19,

Sengodan teaches voice information (page 13, line 24).

Neither Sengodan nor Eskelinen teaches the well-known Bluetooth voice transmission system.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Segodan's voice information transmission with Bluetooth technology **in order** to use standard hardware that is readily available.

6. Claims 8, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengodan (WO 01/54116), as applied to claim 1 above in view of Wigren et al. (5,572,622).

As to claims 8, 14 and 20,

Sengodan does not teach a system disposed to mute transmitted data frames affected by interference.

However, Wigren et al. teach

disposed to mute transmitted data frames affected by interference (mobile telephone system) in said transmission interface (mute bad frames, col. 3 lines 5-10).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to mute bad (missing or erroneous) data frames **in order** to conceal frames that would otherwise cause loud "clicks", as taught by Wigren et al., col. 3, lines 14-16.

7. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengodan (WO 01/54116) in view of Wigren et al. (5,572,622).

As to claim 9,

Sengodan teaches

transmitting a succession of data frames of signal samples collectively representing said information (**communication system necessarily transmits frames, page 5, lines 29-30 and page 6 lines 1-6**) into said interface (**page 5 line 29**), from a transmission side thereof said data frames respectively contained in a succession of pitch synchronous frames (**pitch synchronized, transmission would necessarily include frame information, such as pitch synchronized, page 6 line 20**);

replacing said particular pitch synchronous frame with a replica of the frame immediately preceding said particular pitch synchronous frame in said pitch

synchronous succession (**replicated frame is used to replace the missing frame, pitch synchronous block reduction used for lost packet recovery.**

Page 6, lines 14-15 & 20-24, & Abstract).

Sengodan does not teach muting.

However, Wigren et al. teach

muting a data frame which becomes lost (bad) (**mute bad frames, col. 3 lines 5-10 col. 3, lines 45-46),**

At the time of the invention, it would have been obvious to one of ordinary skill in the art to mute data frames **in order** to conceal bad frames that would otherwise cause loud "clicks", as taught by Wigren et al., col. 3, lines 14-16.

Claim 10 recites the same or similar limitations as claim 3 rejected above, and so is rejected for the same reasons.

Claim 11 recites the same or similar limitations as claim 4 rejected above, and so is rejected for the same reasons.

Claim 12 recites the same or similar limitations as claim 5 rejected above, and so is rejected for the same reasons.

Conclusion

8. The following art made of record and not relied upon is considered pertinent to applicant's disclosure Unno (6,826,527); Bialik (2002/0159472); Wigren et al. (5,598,506);

Westerlund et al. (6,757,654); & Kovesi et al. (2004/0010407).

Unno teaches concealment of erased frames by frame repetition techniques.

Bialik teaches voice encoder utilizes previous frame information to decode packet if it did not arrive properly.

Wigren et al. teach receiver detects frames that are containing transmission error, decides which frames are of error and conceals the frames with errors.

Kovesi et al. teach concealing transmission error after data has been decoded.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myriam Pierre whose telephone number is 703-605-1196. The examiner can normally be reached on Monday – Friday from 5:30 a.m. - 2:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on 703-306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2654

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

02/17/05

A handwritten signature in black ink, appearing to read 'Tālivaldis Ivars Šmits', written in a cursive style.

TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER